



**5687**

**TWIN TRIODE**

**FOR GENERAL-PURPOSE AMPLIFIER APPLICATIONS**

**MEDIUM-MU  
9-PIN MINIATURE**

**HIGH PERVEANCE  
SEPARATE CATHODES**

**DESCRIPTION AND RATING**

The 5687 is a miniature, medium-mu twin triode for use in general-purpose amplifier applications. The tube is characterized by high perveance and high emission capabilities. Except for the common heater connection, each section is electrically independent.

**GENERAL**

**ELECTRICAL**

Cathode—Coated Unipotential	Series	Parallel	
Heater Voltage, AC or DC	$12.6 \pm 10\%$	$6.3 \pm 10\%$	Volts
Heater Current	0.45	0.9	Amperes
Direct Interelectrode Capacitances*			
Grid to Plate, Each Section	4.0		$\mu\text{mf}$
Input, Each Section	4.0		$\mu\text{mf}$
Output, Section 1	0.6		$\mu\text{mf}$
Output, Section 2	0.5		$\mu\text{mf}$
Heater to Cathode, Each Section	7.0		$\mu\text{mf}$
Grid to Grid, approximate	0.025		$\mu\text{mf}$
Plate to Plate, approximate	0.75		$\mu\text{mf}$

\* Without external shield.

**MECHANICAL**

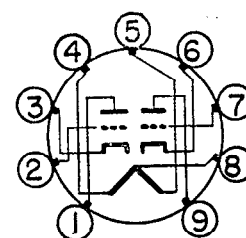
Mounting Position—Any  
Envelope—T-6½, Glass  
Base—E9-1, Small Button 9-Pin

The tubes and arrangements disclosed herein may be covered by patents of General Electric Company or others. Neither the disclosure of any information herein nor the sale of tubes by General Electric Company conveys any license under patent claims covering combinations of tubes with other devices or elements. In the absence of an express written agreement to the contrary, General Electric Company assumes no liability for patent infringement arising out of any use of the tubes with other devices or elements by any purchaser of tubes or others.

**GENERAL ELECTRIC**

Supersedes ET-T1018A dated 7-55

**BASING DIAGRAM**

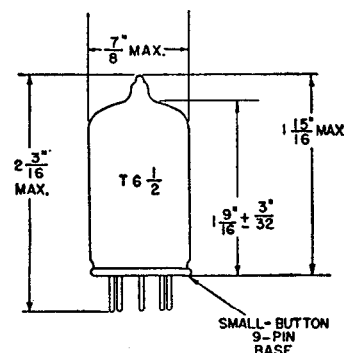


EIA 9H

**TERMINAL CONNECTIONS**

- Pin 1—Plate (Section 2)
- Pin 2—Grid (Section 2)
- Pin 3—Cathode (Section 2)
- Pin 4—Heater
- Pin 5—Heater
- Pin 6—Cathode (Section 1)
- Pin 7—Grid (Section 1)
- Pin 8—Heater Center Tap
- Pin 9—Plate (Section 1)

**PHYSICAL DIMENSIONS**



EIA 6-2

## MAXIMUM RATINGS

### DESIGN-CENTER VALUES, Each Section

Plate Voltage .....	300	Volts
Inverse Plate Voltage .....	1000	Volts
Plate Dissipation, Each Plate .....	4.2	Watts
Total Plate Dissipation, Both Plates .....	7.5	Watts
DC Grid Current .....	6.0	Milliamperes
Heater-Cathode Voltage		
Heater Positive with Respect to Cathode .....	90	Volts
Heater Negative with Respect to Cathode .....	90	Volts
Grid-Circuit Resistance .....	1.0	Megohms
Bulb Temperature at Hottest Point .....	220	C

Design-Center ratings are limiting values of operating and environmental conditions applicable to a bogey tube of a specified type as defined by its published data, and should not be exceeded under normal conditions.

The tube manufacturer chooses these values to provide acceptable serviceability of the tube in average applications, taking responsibility for normal changes in operating conditions due to rated supply-voltage variation, equipment component variations, equipment control adjustment, load variation, signal variation, environmental conditions, and variations in tube characteristics.

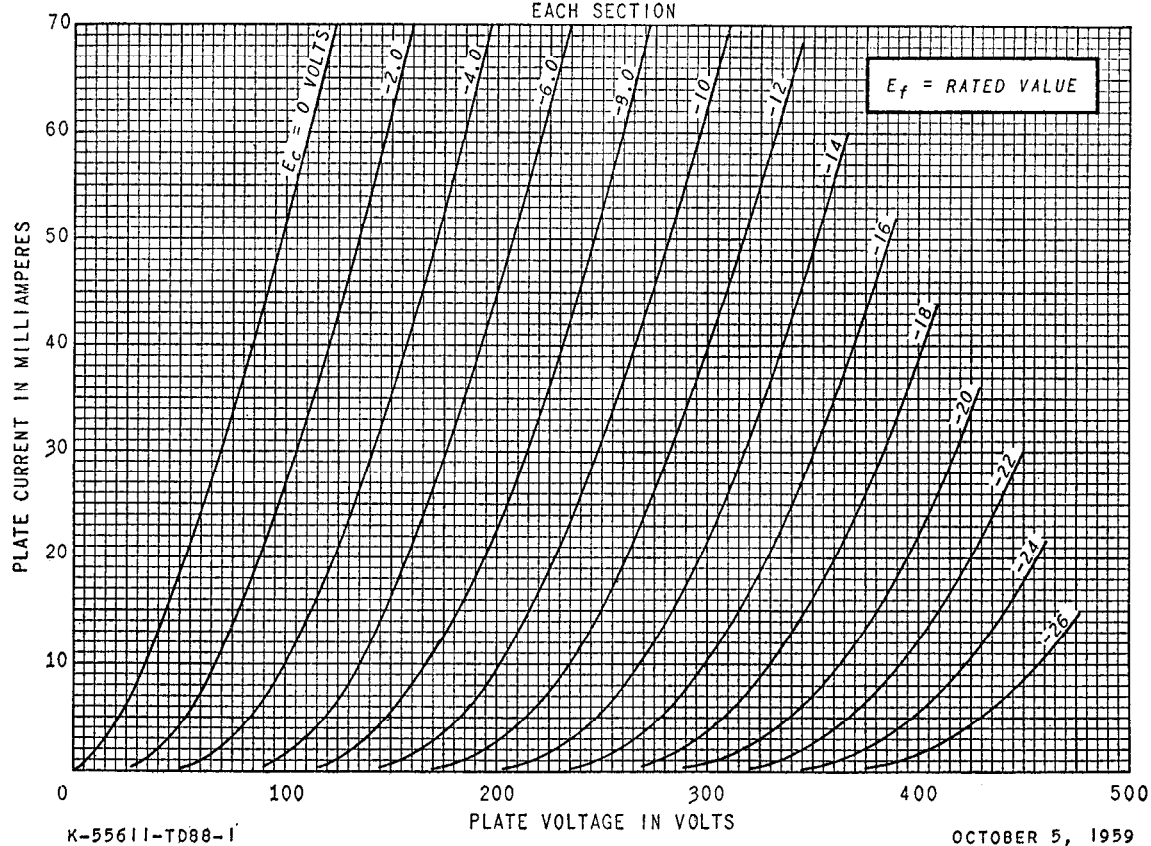
The equipment manufacturer should design so that initially no design-center value for the intended service is exceeded with a bogey tube in equipment operating at the stated normal supply-voltage.

## CHARACTERISTICS AND TYPICAL OPERATION

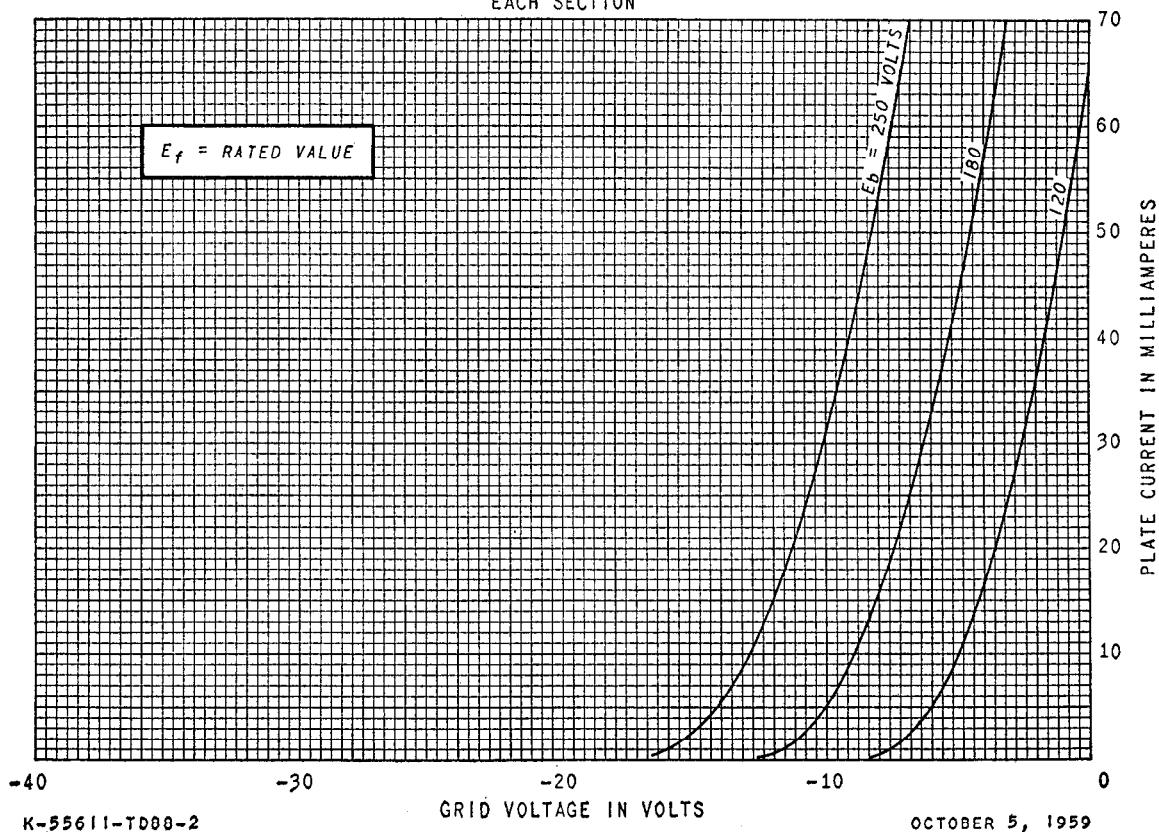
### CLASS A<sub>1</sub> AMPLIFIER, Each Section

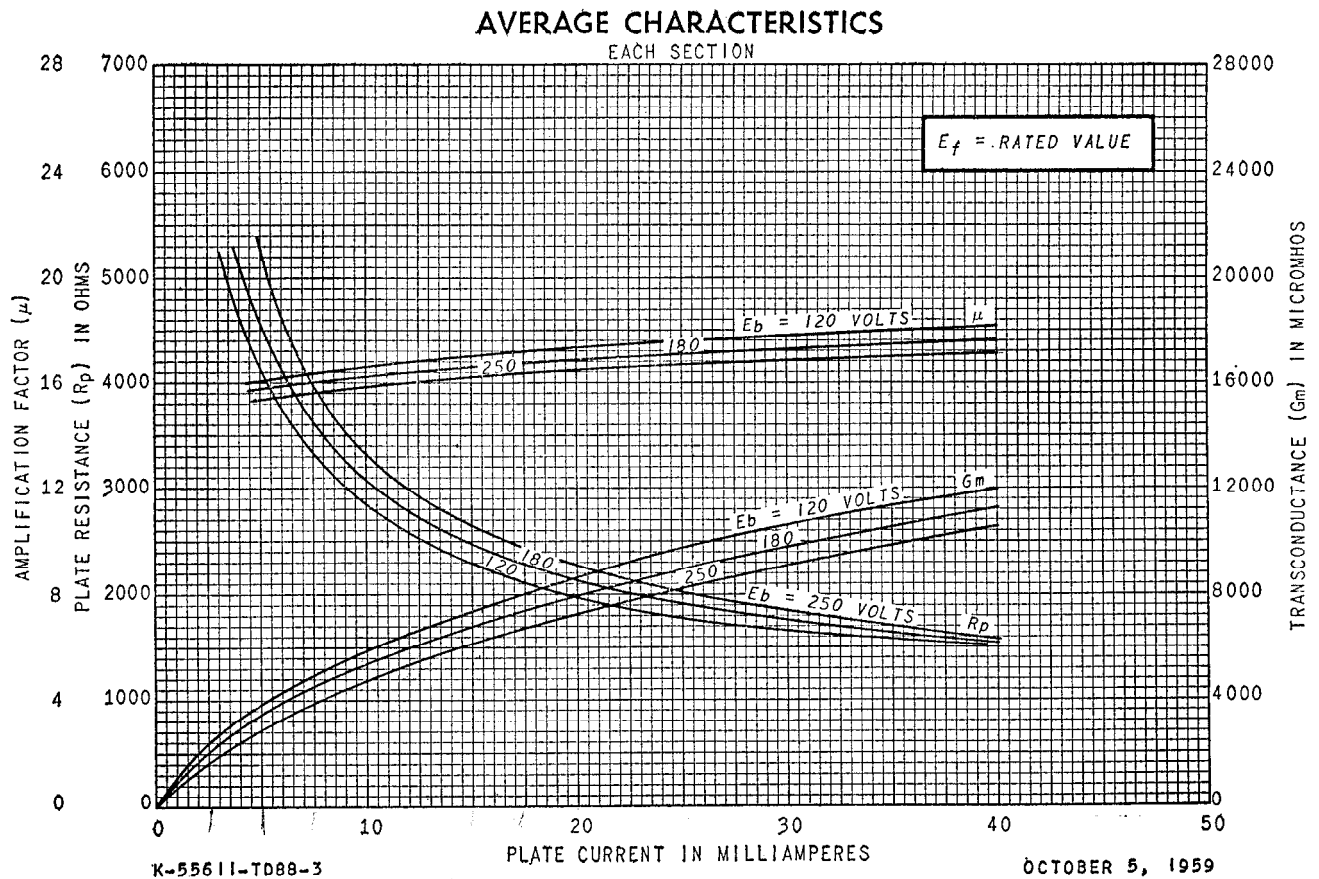
Plate Voltage .....	120	180	250	Volts
Grid Voltage .....	-2	-7	-12.5	Volts
Amplification Factor .....	18	17	16	
Plate Resistance, approximate .....	1560	2000	3000	Ohms
Transconductance .....	11,500	8500	5400	Micromhos
Plate Current .....	36	23	12	Milliamperes
Grid Voltage, approximate				
I <sub>b</sub> = 100 Microamperes .....	-9	-14	-19	Volts

# **AVERAGE PLATE CHARACTERISTICS** EACH SECTION



# **AVERAGE TRANSFER CHARACTERISTICS** EACH SECTION





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